

# Memorandum

TO: Nick Brand

FROM: Michael Snavey, Rachel Copperman, David Kurth, George Mazur

DATE: March 9, 2010

RE: Increased Parking Cost Scenario

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The CS project team modeled an Increased Parking Cost Scenario for the Phase 1 System and Full System in 2030 and 2035. This scenario tested the effect of the alternative station parking costs shown in Table 1. At most HST stations, the parking cost for the Increased Parking Cost Scenario is higher than the assumed parking rate at the closest airport. This scenario maintained all other assumptions associated with the May 2009 Operating Plan.

## 2030 and 2035 Ridership and Revenue Results – Phase 1

The Increased Parking Cost Scenario Phase 1 2030 run resulted in a predicted annual high-speed rail ridership of 54.4 million (see Table 2). This value represents a decrease of 4.4 million, or 7.5 percent, compared to the May 2009 Operating Plan runs. As expected, shorter distance riders are more sensitive to increases in parking cost than longer distance riders. This sensitivity is particularly the case for HSR because fares are distance-based and parking costs are fixed, thus as distance decreases the share of total trip cost attributable to parking increases.

The results in Table 2 indicate that the ridership within a market area (intraregional) decreases far more significantly than ridership between markets (interregional). For example, in 2030, total ridership within the entire LA Basin and within the entire MTC region decreases by 3.7 million (21 percent) compared to May 2009. Total interregional ridership decreases by 0.8 million (2 percent) compared to May 2009. Of the 4.4 million ridership decrease in the Increased Parking Cost Scenario, 82% of the decrease is attributable to intraregional travel and 18% is attributable to interregional travel.

Ridership changes influence system revenue. Interregional revenue decreases by \$37 million (2 percent), while intraregional revenue decreases by \$39 million (20 percent). Of the \$76 million total revenue decrease in the Increased Parking Cost Scenario, 51% of the decrease is attributable to intraregional travel and 49% is attributable to interregional travel. The decrease in long-distance interregional travel has a disproportionate effect on systemwide revenue due to higher average fares for interregional travel (\$54 for interregional compared to \$11 for intraregional travel).

**Table 1. Station Parking Cost Comparison**

Station	Assumed Parking Cost per Trip (2005 Dollars)		
	May 2009 Operating Plan	Increased Parking Cost Scenario	Nearest Airport
San Francisco (Transbay)	\$25	\$36	\$25.50
Millbrae	\$3	\$16	\$25.50
Redwood City	\$3	\$16	\$25.50
San Jose	\$3	\$21	\$25.50
Gilroy	\$3	\$11	\$22.50
Sacramento	\$6	\$16	\$9.50
Stockton	\$3	\$11	\$3.00
Modesto/SP Downtown	\$3	\$11	\$3.00
Merced	\$3	\$11	\$3.00
Fresno	\$3	\$16	\$10.00
Bakersfield	\$3	\$16	\$7.50
Palmdale	\$3	\$11	\$18.50
Sylmar	\$3	\$16	\$18.50
Burbank	\$3	\$21	\$18.50
Los Angeles (Union)	\$6	\$32	\$19.00
Norwalk	\$3	\$16	\$10.50
Anaheim	\$3	\$21	\$17.00
City of Industry	\$3	\$11	\$10.00
Ontario	\$10	\$16	\$10.00
Riverside	\$3	\$11	\$10.00
Temecula/Murrieta	\$3	\$11	\$17.00
Escondido	\$3	\$11	\$18.00
University City	\$3	\$16	\$18.00
San Diego	\$12	\$27	\$18.00
<b>Average Daily Cost</b>	<b>\$5</b>	<b>\$17</b>	<b>\$15</b>

The ridership and revenue changes in Table 3 for 2035 follow a similar pattern. Both analyses show a 7.5 percent reduction in total ridership and a 3 percent reduction in total revenue. Fares and parking costs in 2035 are assumed equal to 2030 in real terms.

Table 4 presents the average daily boardings at each high-speed rail station. The impact of higher parking costs on daily boardings varies by station. In 2030 and 2035, Millbrae, Redwood City, Palmdale, Burbank, and Los Angeles all show percent reductions in boardings over 10 percent. Millbrae has the highest reduction at 24 percent in 2030 and 23 percent in 2035. The explanation for the higher reductions at these stations is that the share of intraregional trips with origins at these stations is comparatively higher than other stations.

**Table 2. 2030 Phase 1 Annual Region-to-Region Ridership and Revenue, Increased Parking Cost Scenario**

Market	May 2009 Operating Plan				Increased Parking Cost Scenario			
	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)
LA Basin – Sacramento	1.9	25%	\$68	\$125	1.8	24%	\$68	\$124
LA Basin – San Diego	0.2	0%	\$14	\$2	0.2	0%	\$14	\$2
LA Basin – Bay Area	11.9	57%	\$67	\$790	11.7	56%	\$67	\$777
Sacramento – Bay Area	0.0	0%	\$11	\$0	0.0	0%	\$12	\$0
San Diego – Sacramento	0.0	2%	\$69	\$2	0.0	2%	\$69	\$2
San Diego – Bay Area	3.2	36%	\$69	\$221	3.2	35%	\$69	\$219
Bay Area – San Joaquin Valley	7.6	11%	\$46	\$346	7.4	10%	\$46	\$340
San Joaquin Valley – LA Basin	8.5	12%	\$42	\$352	8.3	12%	\$42	\$340
Sacramento – San Joaquin Valley	0.6	3%	\$52	\$29	0.6	3%	\$52	\$29
San Diego – San Joaquin Valley	0.1	25%	\$46	\$3	0.1	26%	\$46	\$3
Within Bay Area Peninsula	8.0	0.1%	\$11	\$87	6.4	0.1%	\$11	\$70
Within North LA Basin	4.3	0.0%	\$12	\$52	3.6	0.0%	\$12	\$43
Within South LA Basin	1.6	0.0%	\$10	\$16	1.2	0.0%	\$10	\$12
North LA – South LA	3.8	0.1%	\$11	\$42	3.0	0.1%	\$11	\$33
Within San Diego Region	-	-	-	-	-	-	-	-
Within San Joaquin Valley	1.0	0.0%	\$31	\$30	0.9	0.0%	\$31	\$29
Other	6.2	0.1%	\$47	\$293	6.1	0.1%	\$47	\$288
<b>Total</b>	<b>58.8</b>	<b>0.1%</b>	<b>\$41</b>	<b>\$2,392</b>	<b>54.4</b>	<b>0.1%</b>	<b>\$43</b>	<b>\$2,316</b>
Within San Diego Region	-	-	-	-	-	-	-	-
Within Entire LA Basin	9.7	0.0%	\$11	\$110	7.7	0.0%	\$11	\$88
Within Entire MTC <sup>a</sup>	8.0	0.1%	\$11	\$87	6.4	0.1%	\$11	\$70
<b>Total between Regions</b>	<b>41.1</b>	<b>0.2%</b>	<b>\$53</b>	<b>\$2,195</b>	<b>40.3</b>	<b>0.2%</b>	<b>\$54</b>	<b>\$2,158</b>

<sup>a</sup> Reflects results from February 2010 revised MTC Intraregional model.

**Table 3. 2035 Phase 1 Annual Region-to-Region Ridership and Revenue, Increased Parking Cost Scenario**

Market	May 2009 Operating Plan				Increased Parking Cost Scenario			
	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)
LA Basin – Sacramento	1.9	25%	\$68	\$131	1.9	24%	\$68	\$129
LA Basin – San Diego	0.2	0%	\$14	\$2	0.2	0%	\$14	\$2
LA Basin – Bay Area	12.2	57%	\$67	\$810	12.0	56%	\$67	\$797
Sacramento – Bay Area	0.0	0%	\$11	\$0	0.0	0%	\$12	\$0
San Diego – Sacramento	0.0	2%	\$69	\$3	0.0	2%	\$69	\$2
San Diego – Bay Area	3.4	36%	\$69	\$235	3.4	35%	\$69	\$232
Bay Area – San Joaquin Valley	8.1	14%	\$46	\$374	8.0	14%	\$46	\$368
San Joaquin Valley – LA Basin	8.9	12%	\$41	\$370	8.7	11%	\$42	\$362
Sacramento – San Joaquin Valley	0.6	8%	\$52	\$32	0.6	8%	\$52	\$32
San Diego – San Joaquin Valley	0.1	25%	\$45	\$4	0.1	25%	\$46	\$4
Within Bay Area Peninsula	8.4	0.1%	\$11	\$91	6.7	0.1%	\$11	\$73
Within North LA Basin	4.5	0.0%	\$12	\$54	3.7	0.0%	\$12	\$45
Within South LA Basin	1.6	0.0%	\$10	\$16	1.2	0.0%	\$10	\$13
North LA – South LA	4.0	0.1%	\$11	\$44	3.1	0.1%	\$11	\$34
Within San Diego Region	0.0	0.0%	\$0	\$0	-	-	-	-
Within San Joaquin Valley	1.1	0.0%	\$31	\$34	1.0	0.0%	\$31	\$32
Other	6.5	0.1%	\$47	\$304	6.4	0.1%	\$47	\$299
<b>Total</b>	<b>61.6</b>	<b>0.1%</b>	<b>\$33</b>	<b>\$2,504</b>	<b>57.0</b>	<b>0.1%</b>	<b>\$43</b>	<b>\$2,424</b>
Within San Diego Region	-	-	-	-	-	-	-	-
Within Entire LA Basin	10.0	0.0%	\$11	\$114	8.0	0.0%	\$11	\$91
Within Entire MTC <sup>a</sup>	8.4	0.1%	\$11	\$91	6.7	0.1%	\$11	\$73
<b>Total between Regions</b>	<b>43.1</b>	<b>0.2%</b>	<b>\$53</b>	<b>\$2,299</b>	<b>42.3</b>	<b>0.2%</b>	<b>\$54</b>	<b>\$2,260</b>

<sup>a</sup> Reflects results from February 2010 revised MTC Intraregional model.

**Table 4. Phase 1 Daily HSR Station Boardings, Increased Parking Cost Scenario**

Origin Station	May 2009 Operating Plan		Increased Parking Cost Scenario	
	2030	2035	2030	2035
San Francisco (Transbay)	41,500	43,600	38,500	40,400
Millbrae	7,000	7,300	5,300	5,600
Redwood City	7,100	7,400	6,200	6,500
San Jose	11,200	11,700	10,200	10,700
Gilroy	6,100	6,400	6,000	6,200
Merced	7,500	8,000	7,300	7,800
Fresno	6,500	6,900	6,400	6,800
Bakersfield	7,500	8,100	7,300	7,900
Palmdale	16,300	17,200	14,500	15,300
Sylmar	7,300	7,600	6,800	7,000
Burbank	3,800	4,000	3,300	3,400
Los Angeles (Union)	17,500	18,100	14,500	15,000
Norwalk	5,900	6,100	5,400	5,600
Anaheim	31,300	32,500	29,300	30,500
<b>Total Daily</b>	<b>176,500</b>	<b>184,900</b>	<b>161,000</b>	<b>168,700</b>

Table 5 presents daily station-to-station line loadings. The decrease in station-to-station trips is smallest (on average 2 to 4 percent) in the San Joaquin Valley. This result is explained by the small share of short-distance trips – of 18.3 million total trips with an end in the San Joaquin Valley, only 1.0 million (5 percent) are internal to the Valley. In the LA Basin, 26 percent of region ridership are intraregional trips, and in the Bay Area, 22 percent of regional ridership are intraregional trips. Intraregional trips are affected more significantly by higher parking costs, therefore station to station trips in the Bay Area (average reduction of 3 to 7 percent) and the LA Basin (average reduction of 4 to 6 percent) are more significantly impacted in 2030 and 2035.

### 2030 and 2035 Ridership and Revenue Results – Full System

The Increased Parking Cost Scenario forecast for 2030 resulted in a predicted annual high-speed rail ridership of 93.7 million (see Table 6). This value represents a decrease of 6.4 million, or 7 percent, compared to the May 2009 Operating Plan runs. Similar to Phase 1 results, shorter distance riders are more sensitive to increases in parking cost than longer distance riders.

**Table 5. Phase I Daily Line Loads, Increased Parking Cost Scenario**

Origin Station	Destination Station	May 2009 Operating Plan		Increased Parking Cost Scenario	
		2030	2035	2030	2035
SF Transbay	Millbrae	41,500	43,500	38,500	40,300
Millbrae	Redwood City	37,800	39,700	36,000	37,700
Redwood City	San Jose	38,200	40,000	36,800	38,700
San Jose	Gilroy	40,700	42,600	39,900	41,900
Gilroy	Merced	2,400	2,500	2,300	2,500
Gilroy	Fresno	43,500	45,600	42,700	44,800
Merced	Fresno	5,100	5,400	5,000	5,300
Fresno	Bakersfield	44,300	46,400	43,600	45,700
Bakersfield	Palmdale	41,300	43,100	40,600	42,300
Palmdale	Sylmar	48,500	50,400	46,200	48,100
Sylmar	Burbank	43,200	44,900	41,000	42,700
Burbank	Los Angeles	39,400	40,900	37,700	39,200
Los Angeles	Norwalk	35,300	36,800	33,200	34,600
Norwalk	Anaheim	31,200	32,600	29,300	30,500

The results in Table 6 indicate that intraregional ridership decreases far more significantly than interregional ridership. For example, in 2030, total ridership within the Los Angeles, San Diego, and San Francisco regions decreases by 4.7 million compared to May 2009. Total ridership between regions only decreases by 1.7 million.

The ridership decrease for long-distance trips has a larger magnitude impact on interregional travel revenues because of higher average fares (\$48 for interregional compared to \$11 for intraregional travel). As a result, interregional total revenue decreases by \$68 million (2 percent), while intraregional travel decreases by \$51 million (18 percent). Note that the percent decrease for intraregional trips is still higher, as total revenues from these trips are only 6 percent of total corridor revenue. Total corridor revenue in 2030 decreases \$114 million (3 percent) because of the increased parking cost.

The ridership and revenue changes in Table 7 for 2035 follow a similar pattern. The percent reduction in ridership (6 percent) and the percent reduction in revenue (3 percent) are comparable to the 2030 analysis. Fares and parking costs in 2035 are assumed equal to 2030 in the factoring process.

**Table 6. 2030 Full System Annual Region-to-Region Ridership and Revenue, Increased Parking Cost Scenario**

Market	May 2009 Operating Plan				Increased Parking Cost Scenario			
	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)
LA Basin – Sacramento	3.8	51%	\$66	\$254	3.8	50%	\$66	\$249
LA Basin – San Diego	21.4	15%	\$31	\$659	20.8	15%	\$31	\$637
LA Basin – Bay Area	12.3	59%	\$68	\$836	12.2	59%	\$68	\$827
Sacramento – Bay Area	3.0	4%	\$45	\$132	2.8	4%	\$45	\$127
San Diego – Sacramento	0.1	5%	\$78	\$7	0.1	4%	\$77	\$7
San Diego – Bay Area	3.5	39%	\$81	\$280	3.4	38%	\$81	\$274
Bay Area – San Joaquin Valley	8.0	11%	\$45	\$359	7.8	11%	\$45	\$354
San Joaquin Valley – LA Basin	8.4	12%	\$44	\$367	8.2	11%	\$44	\$360
Sacramento – San Joaquin Valley	2.1	9%	\$42	\$87	2.0	9%	\$43	\$86
San Diego – San Joaquin Valley	0.1	26%	\$55	\$4	0.1	27%	\$56	\$5
Within Bay Area Peninsula	8.1	0.1%	\$11	\$87	6.5	0.1%	\$11	\$71
Within North LA Basin	6.0	0.1%	\$12	\$75	5.0	0.1%	\$12	\$61
Within South LA Basin	3.5	0.0%	\$10	\$36	2.9	0.0%	\$10	\$30
North LA – South LA	6.8	0.2%	\$11	\$76	5.5	0.2%	\$11	\$61
Within San Diego Region	0.4	0.0%	\$11	\$4	0.3	0.0%	\$11	\$3
Within San Joaquin Valley	2.3	0.0%	\$29	\$65	2.1	0.0%	\$29	\$62
Other	10.5	0.1%	\$53	\$554	10.3	0.1%	\$53	\$547
<b>Total</b>	<b>100.1</b>	<b>0.1%</b>	<b>\$39</b>	<b>\$3,882</b>	<b>93.7</b>	<b>0.2%</b>		<b>\$3,763</b>
Within San Diego Region	0.4	0.0%	\$11	\$4	0.3	0.0%	\$11	\$3
Within Entire LA Basin	16.3	0.1%	\$11	\$187	13.3	0.0%	\$11	\$153
Within Entire MTC <sup>a</sup>	8.1	0.1%	\$11	\$87	6.5	0.0%	\$11	\$71
<b>Total between Regions</b>	<b>75.3</b>	<b>1%</b>	<b>\$48</b>	<b>\$3,604</b>	<b>73.6</b>	<b>1%</b>	<b>\$48</b>	<b>\$3,536</b>

<sup>a</sup> Reflects results from February 2010 revised MTC Intraregional model.

**Table 7. 2035 Full System Annual Region-to-Region Ridership and Revenue, Increased Parking Cost Scenario**

Market	May 2009 Operating Plan				Increased Parking Cost Scenario			
	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)	HSR Ridership (Millions)	HSR Mode Share	HSR Average Fare (2008 Dollars)	Revenue (2008 Dollars in Millions)
LA Basin – Sacramento	4.0	51%	\$66	\$263	3.9	50%	\$66	\$258
LA Basin – San Diego	22.6	15%	\$31	\$694	21.9	15%	\$31	\$672
LA Basin – Bay Area	12.4	59%	\$68	\$843	12.3	59%	\$68	\$836
Sacramento – Bay Area	3.1	4%	\$45	\$140	3.0	4%	\$45	\$135
San Diego – Sacramento	0.1	5%	\$78	\$8	0.1	4%	\$78	\$8
San Diego – Bay Area	3.8	39%	\$81	\$306	3.7	38%	\$81	\$299
Bay Area – San Joaquin Valley	8.6	11%	\$45	\$389	8.5	11%	\$45	\$383
San Joaquin Valley – LA Basin	8.7	12%	\$44	\$381	8.5	11%	\$44	\$374
Sacramento – San Joaquin Valley	2.2	9%	\$42	\$94	2.2	9%	\$43	\$93
San Diego – San Joaquin Valley	0.1	25%	\$56	\$5	0.1	27%	\$56	\$6
Within Bay Area Peninsula	8.5	0.1%	\$11	\$92	6.8	0.1%	\$11	\$74
Within North LA Basin	6.3	0.1%	\$12	\$77	5.1	0.1%	\$12	\$64
Within South LA Basin	3.7	0.0%	\$10	\$38	3.0	0.0%	\$10	\$31
North LA – South LA	7.0	0.2%	\$11	\$78	5.7	0.2%	\$11	\$64
Within San Diego Region	0.4	0.0%	\$11	\$4	0.3	0.0%	\$11	\$4
Within San Joaquin Valley	2.4	0.0%	\$29	\$71	2.3	0.0%	\$29	\$68
Other	11.0	0.1%	\$53	\$578	10.8	0.1%	\$53	\$570
<b>Total</b>	<b>104.9</b>	<b>0.2%</b>	<b>\$39</b>	<b>\$4,062</b>	<b>98.2</b>	<b>0.2%</b>	<b>\$40</b>	<b>\$3,938</b>
Within San Diego Region	0.4	0.0%	\$11	\$4	0.3	0.0%	\$11	\$4
Within Entire LA Basin	16.9	0.1%	\$11	\$193	13.8	0.0%	\$11	\$158
Within Entire MTC <sup>a</sup>	8.5	0.1%	\$11	\$92	6.8	0.0%	\$11	\$74
<b>Total between Regions</b>	<b>79.1</b>	<b>0.5%</b>	<b>\$48</b>	<b>\$3,773</b>	<b>77.3</b>	<b>1%</b>	<b>\$48</b>	<b>\$3,702</b>

<sup>a</sup> Reflects results from February 2010 revised MTC Intraregional model.



Table 8 presents the average daily boardings at each high-speed rail station. The impact of higher parking costs on daily boardings varies by station. In 2030 and 2035, Millbrae, Redwood City, Palmdale, Burbank, Los Angeles, and Norwalk all show percent reductions in boardings over 10 percent. Millbrae has the highest reduction at 22 percent in 2030 and 2035. The explanation for the higher reductions at these stations is that the share of intraregional trips with origins at these stations is comparatively higher than other stations. Table 9 presents daily station-to-station line loadings. The decrease in station-to-station trips is smallest (on average 1 to 2 percent) in the San Joaquin Valley, and in the San Diego region (on average 3 to 4 percent).

**Table 8. Full System Average Daily HSR Stations Boardings, Increased Parking Cost Scenario**

Origin Station	May 2009 Operating Plan		Increased Parking Cost Scenario	
	2030	2035	2030	2035
San Francisco (Transbay)	37,500	39,300	34,500	36,200
Millbrae	7,300	7,700	5,700	6,000
Redwood City	8,400	8,900	7,500	7,800
San Jose	13,100	13,700	12,100	12,600
Gilroy	6,600	6,900	6,500	6,700
Sacramento	18,500	19,500	18,100	19,100
Stockton	6,500	6,900	6,300	6,700
Modesto/SP Downtown	4,500	4,800	4,400	4,600
Merced	2,500	2,700	2,500	2,600
Fresno	8,200	8,700	8,000	8,400
Bakersfield	8,300	9,000	8,100	8,800
Palmdale	18,300	19,200	16,400	17,300
Sylmar	13,700	14,300	12,900	13,400
Burbank	4,600	4,700	4,100	4,300
Los Angeles (Union)	32,700	33,900	28,100	29,100
Norwalk	7,600	7,800	6,800	7,000
Anaheim	23,700	24,500	21,700	22,400
City of Industry	6,900	7,200	6,400	6,700
Ontario	11,600	12,000	10,600	11,000
Riverside	14,400	15,000	13,700	14,300
Temecula/Murrieta	7,400	7,700	7,100	7,400
Escondido	8,100	8,600	7,800	8,300
University City	5,800	6,400	5,900	6,200
San Diego	20,000	21,100	19,200	20,300
Daily	296,200	310,500	274,100	287,100

**Table 9. Full System Daily Line Loads, Increased Parking Cost Scenario**

Origin Station	Destination Station	May 2009 Operating Plan		Increased Parking Cost Scenario	
		2030	2035	2030	2035
San Francisco (Transbay)	Millbrae	37,500	39,300	34,500	36,100
Millbrae	Redwood City	34,100	35,700	32,400	33,900
Redwood City	San Jose	35,600	37,400	34,400	36,000
San Jose	Morgan Hill	40,000	41,800	39,200	41,100
Morgan Hill	Gilroy	40,000	41,800	39,200	41,100
Gilroy	Merced	6,200	6,700	6,100	6,400
Gilroy	Fresno	34,200	35,600	33,700	35,100
Sacramento	Stockton	18,500	19,500	18,100	19,100
Stockton	Modesto/SP Downtown	24,200	25,500	23,700	25,000
Modesto/SP Downtown	Merced	27,200	28,600	26,700	28,100
Merced	Fresno	22,600	23,700	22,200	23,300
Fresno	Bakersfield	53,700	56,000	53,000	55,300
Bakersfield	Palmdale	49,800	51,600	49,100	50,900
Palmdale	Sylmar	58,400	60,500	55,900	57,800
Sylmar	Burbank	55,800	57,800	53,300	55,200
Burbank	Los Angeles (Union)	54,100	56,000	51,900	53,900
Los Angeles (Union)	Norwalk	27,100	28,100	25,100	26,000
Norwalk	Anaheim	23,700	24,500	21,700	22,400
Los Angeles (Union)	City of Industry	39,500	41,400	37,500	39,200
City of Industry	Ontario	41,900	43,900	39,800	41,800
Ontario	Riverside	41,300	43,400	39,700	41,800
Riverside	Temecula/Murrieta	37,500	39,600	36,200	38,200
Temecula/Murrieta	Escondido	33,000	35,000	32,000	33,900
Escondido	University City	25,500	27,000	24,700	26,200
University City	San Diego	19,800	21,100	19,200	20,300

### 2030 Average Daily Parking – Phase 1 and Full System

A model postprocessor was developed to forecast station access, egress, and parking duration patterns<sup>1</sup>. The postprocessor combines projections of total systemwide access/egress by mode from the ridership and revenue model with information on current access/egress patterns around existing airport and rail station areas. The post-processor performs an iterative adjustment to the access/egress patterns at each station until systemwide balance is attained.

<sup>1</sup> Further information on the access/egress post-processor can be found in: “Ridership and Revenue Forecasting for the Finance Plan”; Cambridge Systematics, Inc.; October 2008.

The iterative adjustment pattern is informed by preliminary access/egress mode shares for each of six station prototype categories that reflect a station's location in the region, the density and urban form around the station, local transit availability, and relative market-rate parking costs. Table 10 lists the prototype categories and the assumed assignment of each proposed HST station to the categories.

**Table 10. Station Categories and Assignments**

Station Category	Stations Assigned to Category	
“City Center” Highest-density; highest parking cost; highest transit access, including rapid transit.	Transbay Oakland-7 <sup>th</sup> Street	Oakland-12 <sup>th</sup> Street LA/Union Station
“Urban Activity Center” High-density; high parking cost; rail (LRT or rapid transit) and extensive bus service.	San Jose Union City San Diego Sacramento Anaheim*	4 <sup>th</sup> and King, SF Millbrae/SFO Oakland/Coliseum Burbank*
“Developed Urban Area” Middle-density; moderate parking cost; local and regional transit available.	Dublin/Pleasanton Warm Springs Shinn Palo Alto Redwood City	Irvine Ontario Norwalk Escondido
“Outlying Downtown or Activity Center” Traditional grid-based downtown in low-density suburban area; moderate to low parking cost; local bus transit.	Modesto Downtown Stockton Bakersfield Fresno	Riverside Visalia Merced
“Exurban or Outlying Area – Rail Transit” Exurban or outlying; low-density station area; low parking cost/free parking; local transit and regional rail transit.	Gilroy Morgan hill Livermore I-680 (Bernal) Greenville/UPRR/Livermore	Sylmar City of Industry Palmdale Tracy – ACE
“Exurban or Outlying Area – No Rail Transit” Exurban or outlying; low-density station area; low parking cost/free parking; low or no transit service.	Briggsmore Tracy downtown Castle AFB Temecula	Livermore/I-580 Greenville Road/I-580 University City East San Gabriel

\* The Anaheim and Burbank stations were modeled as both “urban activity center” and “developed urban area” prototypes. The parking results presented below reflect the “urban activity center” prototype for these two stations.

The post-processor also projects average daily parking accumulation at each station by combining the projected number of travelers that drive/park at a station, average party size, and trip duration patterns from the 2005 high-speed rail travel survey. Table 11 displays the projected average daily parking duration by station for year 2030 Phase 1. Similar results for year 2030 Full System are displayed in Table 12.

**Table 11. Year 2030 Phase 1 Average Daily Parking Accumulation**

Station Name	Average Daily Parking Accumulation
San Francisco (Transbay)	8,016
Millbrae	956
Redwood City	2,266
San Jose	3,086
Gilroy	5,389
Merced	7,076
Fresno	5,239
Bakersfield	5,896
Palmdale	9,166
Sylmar	4,891
Burbank	788
Los Angeles (Union)	2,174
Norwalk	2,588
Anaheim	13,175
<b>Total</b>	<b>70,706</b>

**Table 12. 2030 Full System Average Daily Parking Accumulation**

<b>Station Name</b>	<b>Average Daily Parking Accumulation</b>
San Francisco (Transbay)	6,033
Millbrae	1,034
Redwood City	2,792
San Jose	3,426
Gilroy	6,045
Sacramento	7,996
Stockton	5,965
Modesto/SP Downtown	3,967
Merced	1,990
Fresno	6,799
Bakersfield	6,644
Palmdale	10,568
Sylmar	9,189
Burbank	1,006
Los Angeles (Union)	4,384
Norwalk	2,901
Anaheim	9,673
City of Industry	4,216
Ontario	3,639
Riverside	8,025
Temecula/Murrieta	5,202
Escondido	3,947
University City	5,280
San Diego	6,459
<b>Total</b>	<b>127,180</b>